

Health Risk Behaviors among Missouri Middle and High School Students

Results from the 2015 Youth Risk Behavior Survey and
2015 Youth Tobacco Survey



Missouri Department of Health and Senior Services
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Introduction

The Missouri Department of Health and Senior Services, in collaboration with the Missouri Department of Elementary and Secondary Education and the U.S. Centers for Disease Control and Prevention (CDC), conducts bi-annual surveys of public middle and high school students to track progress in efforts to reduce health risk behaviors among youth. Information about the methodology for the Youth Risk Behavior Survey (YRBS) and Youth Tobacco Survey (YTS) may be found on page 23.

This report summarizes key findings from the 2015 YRBS and 2015 YTS including results from previous years that demonstrate changes over time. Previous years of YRBS data may be found on the CDC website at <http://apps.nccd.cdc.gov/YouthOnline/App/Default.aspx>. Previous reports of Missouri YRBS and YTS data may be found at <http://www.health.mo.gov/data/index.php>.

2015 Key Findings

The good news, during the decade of 2005-2015:

- ✓ Non-diet soda consumption declined significantly among middle and high school students
- ✓ Participation in at least 60 minutes of physical activity on five or more days of the week increased significantly among high school students
- ✓ Current cigarette smoking declined significantly among middle and high school students
- ✓ Current alcohol use and binge drinking declined significantly among high school students
- ✓ The percentage of high school students who engaged in sexual intercourse in the past three months declined significantly

Of concern in 2015:

- Forty-one (40.6) percent of high school students had tried using an electronic vapor product (e-cigarette) and 22.0 percent currently used vapor products
- Almost half of middle and high school students were exposed to secondhand tobacco smoke in public places during the past seven days
- Among high school students that drove in the past 30 days, about one-half texted or e-mailed, or talked on a cell phone while driving
- Over 80 percent of high school females rode with someone who was texting or talking on a cell phone while driving during the past 30 days
- The percentage of high school students that used a condom when engaging in sexual intercourse during the past three months continued to decline
- About one-third of middle school students and a quarter of high school students had been bullied on school property during the past 12 months
- Eighteen (17.5) percent of high school students had taken a prescription drug without a doctor's prescription, including 33.3 percent of 12th grade males

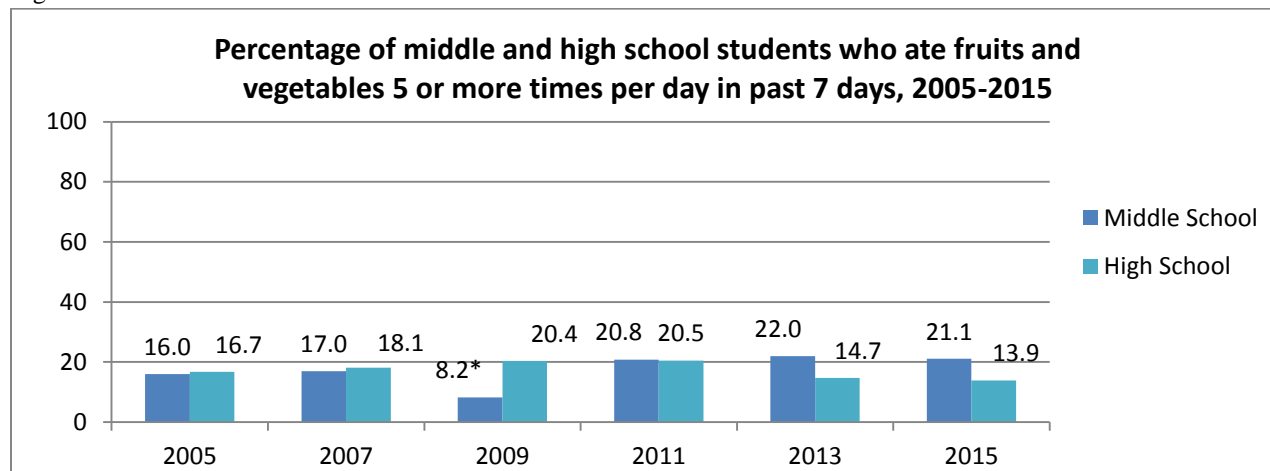
Health Risk Behaviors among Missouri Middle and High School Students

Dietary Behaviors

Fruit and vegetable consumption

The percentage of middle and high school students who ate fruits and vegetables five or more times per day during the past seven days did not change significantly over the past decade (Figure 1).

Figure 1

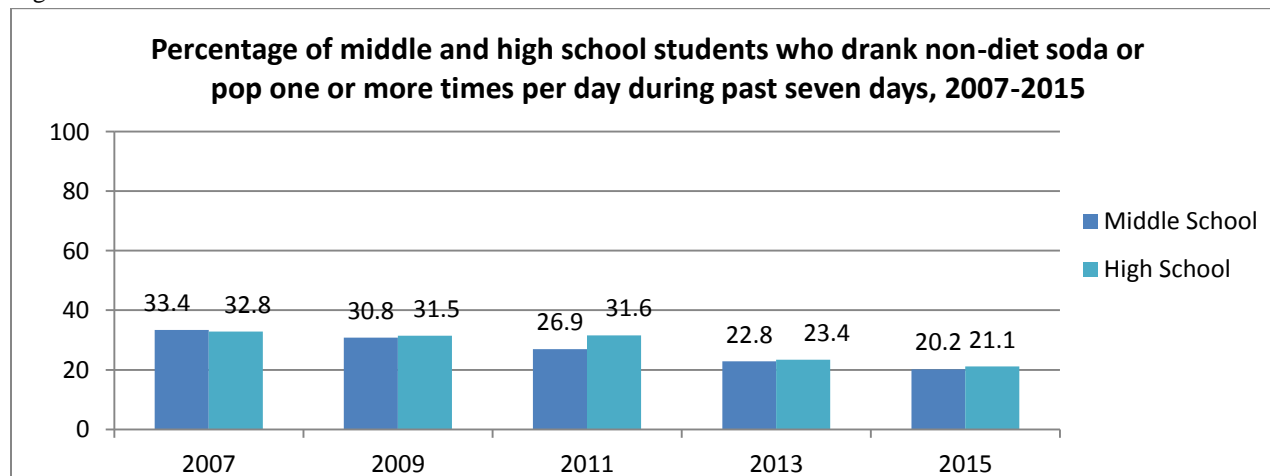


*Different question: Five or more servings of fruits and vegetable eaten the day before the survey.

Non-diet soda and sugar-sweetened beverage consumption

The percentage of middle and high school students who drank non-diet soda or pop one or more times per day during the past seven days declined significantly from 2007 to 2015 (Figure 2). Additionally, 20.4 percent of high school students and 20.4 percent of middle school students drank a sugar-sweetened beverage other than soda (such as an energy or sports drink) one or more times per day during the past seven days.

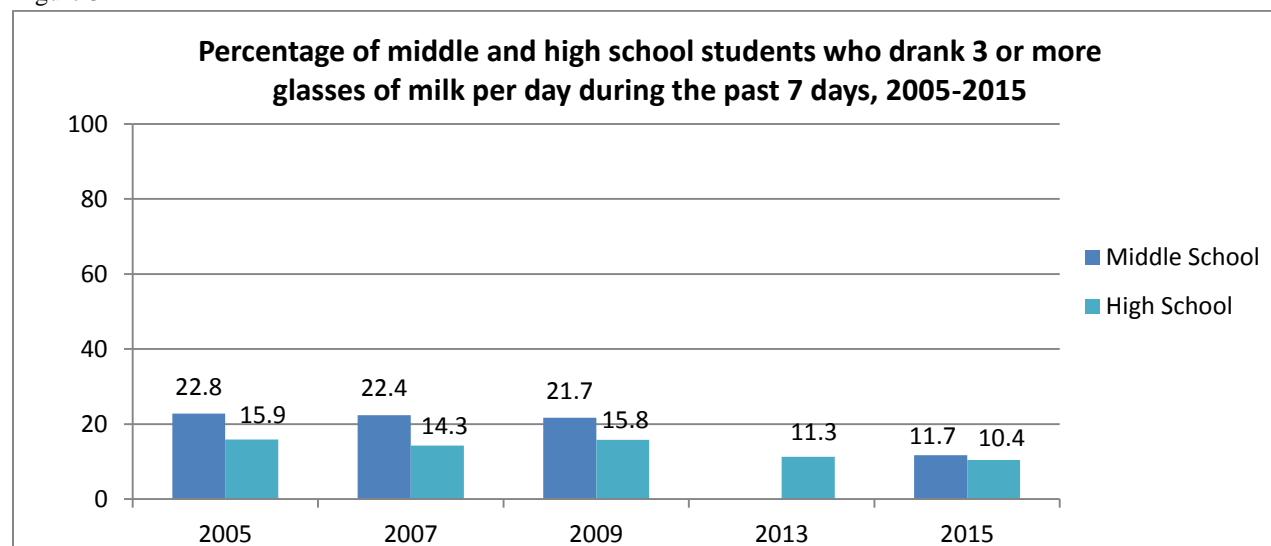
Figure 2



Milk consumption

The percentage of middle and high school students who drank three or more glasses of milk per day during the past seven days declined significantly over the decade (Figure 3). Data are not available for 2011 or for middle school students in 2013.

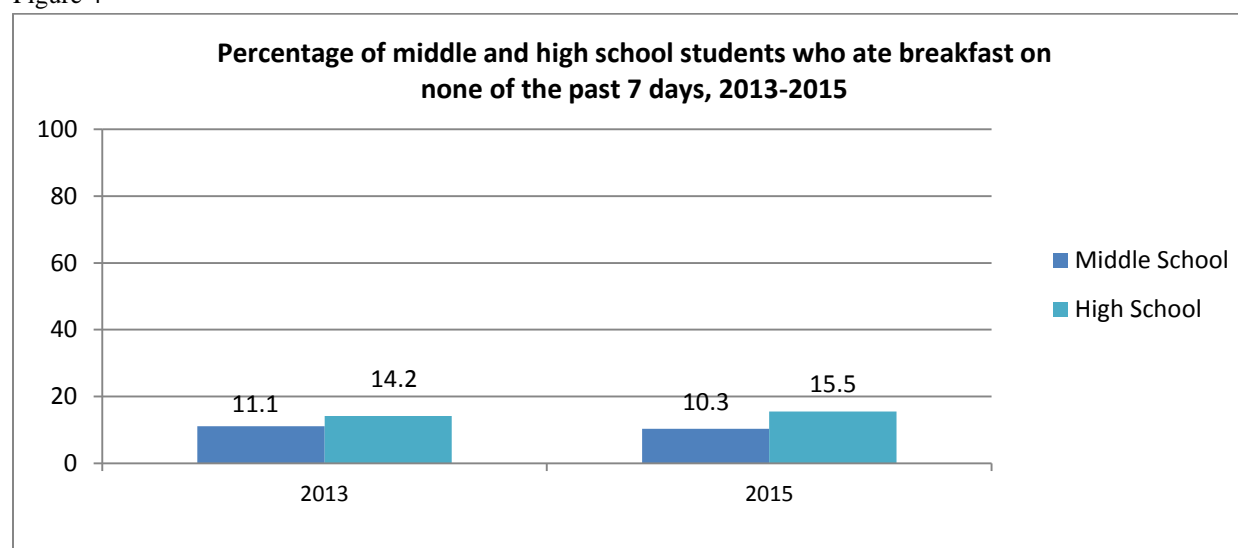
Figure 3



Breakfast consumption

In 2015, 10.3 percent of middle school students and 15.5 percent of high school students did not eat breakfast on any of the past seven days (Figure 4). Forty eight (47.5) percent of middle school students and 30.9 percent of high school students ate breakfast on all of the past seven days.

Figure 4

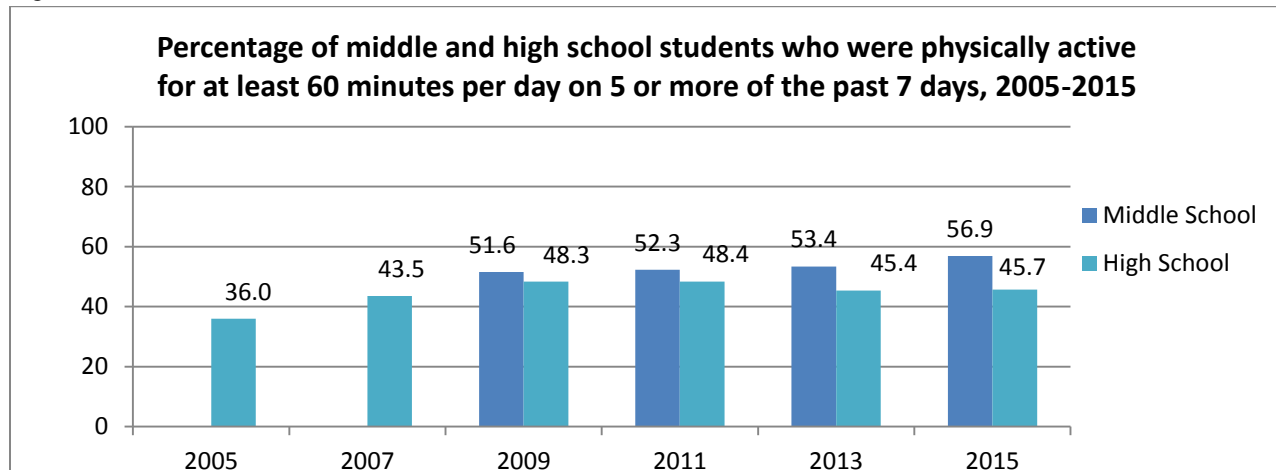


Physical Activity

Participation in physical activity

The percentage of high school students who participated in any type of physical activity that increased their heart rate and made them breathe hard some of the time for at least 60 minutes per day on five or more of the past seven days increased significantly from 2005 to 2015 (Figure 5). Additionally, 51.2 percent of high school students and 57.2 percent of middle school students engaged in exercises to strengthen or tone muscles on three or more of the past seven days.

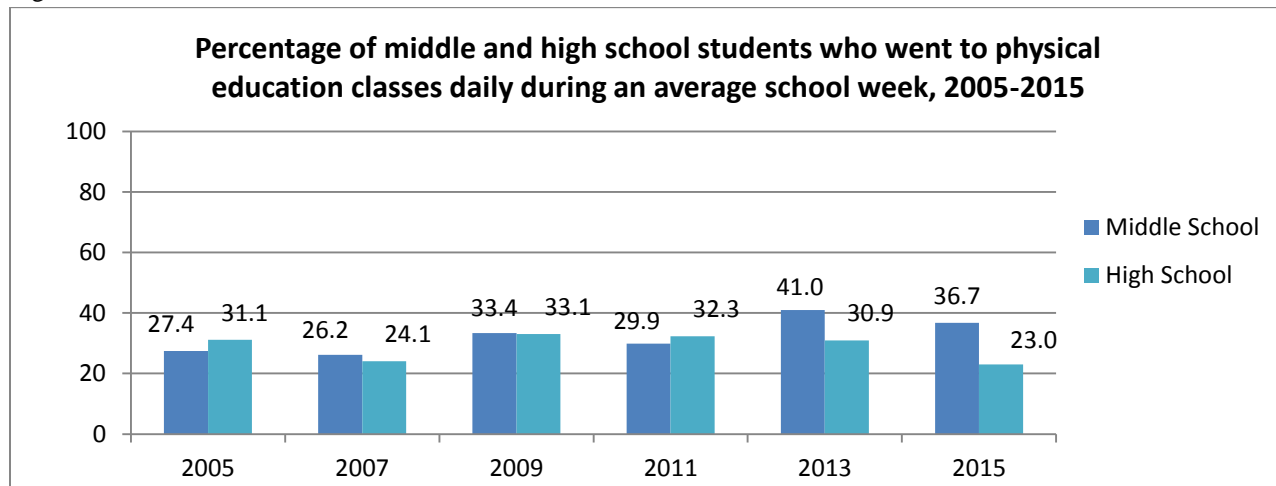
Figure 5



Participation in school physical education

Thirty-seven (36.7) percent of middle students and 23.0 percent of high school students attended physical education class daily in an average week when they were in school in 2015 (Figure 6). Additionally, 21.2 percent of middle school students were provided a short physical activity break by their classroom teachers.

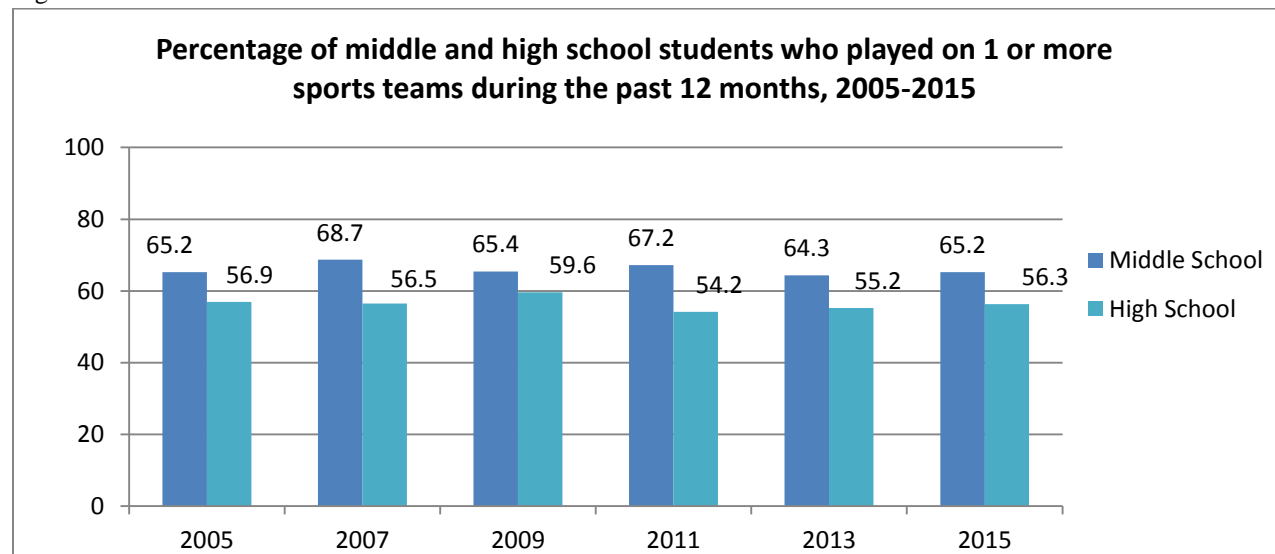
Figure 6



Participation on sports teams

Each year over the decade, more than 60 percent of middle school students and 50 percent of high school students played on one or more sports teams during the past 12 months (Figure 7).

Figure 7



Television viewing and video game/computer usage on school days

Over the decade, a decreased percentage of middle and high school students watched television on school days, while an increased percentage played video games or used a computer (Table 1).

The percentage of high school students who watched television for three or more hours per day on an average school day decreased significantly from 33.9 percent in 2005 to 21.2 percent in 2015 and among middle school students from 40.4 percent in 2005 to 27.6 percent in 2015.

The percentage of middle school students that played video games or used a computer for three or more hours per day on a school day increased significantly from 25.9 percent in 2009 to 31.8 percent in 2015 and among high school students from 21.5 percent in 2007 to 37.4 percent in 2015.

Table 1

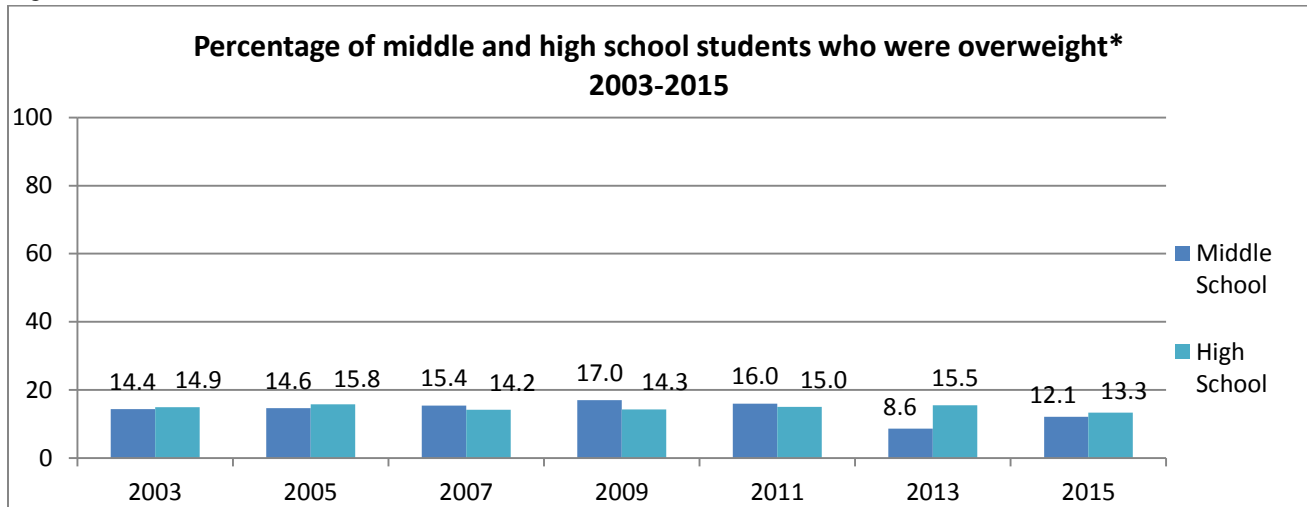
| Percentage of: | 2005 | 2007 | 2009 | 2011 | 2013 | 2015 |
|---|-------------|-------------|-------------|-------------|-------------|-------------|
| Middle school students that watched television three or more hours per day on an average school day | 40.4 | 36.9 | 33.2 | 32.3 | 30.9 | 27.6 |
| High school students that watched television three or more hours per day on an average school day | 33.9 | 29.6 | 32.4 | 29.9 | 25.6 | 21.2 |
| Middle school students that played video or computer games or used computer for other than school work for three or more hours per day on an average school day | N/A | N/A | 25.9 | 27.1 | 29.8 | 31.8 |
| High school students that played video or computer games or used computer for other than school work for three or more hours per day on an average school day | N/A | 21.5 | 22.9 | 24.8 | 32.7 | 37.4 |

Overweight and Obesity

Overweight

Twelve (12.1) percent of middle students and 13.3 percent of high school students were overweight in 2015 (Figure 8). Additionally, in 2015 44.6 percent of high school students, including 58.8 percent of females, were trying to lose weight.

Figure 8

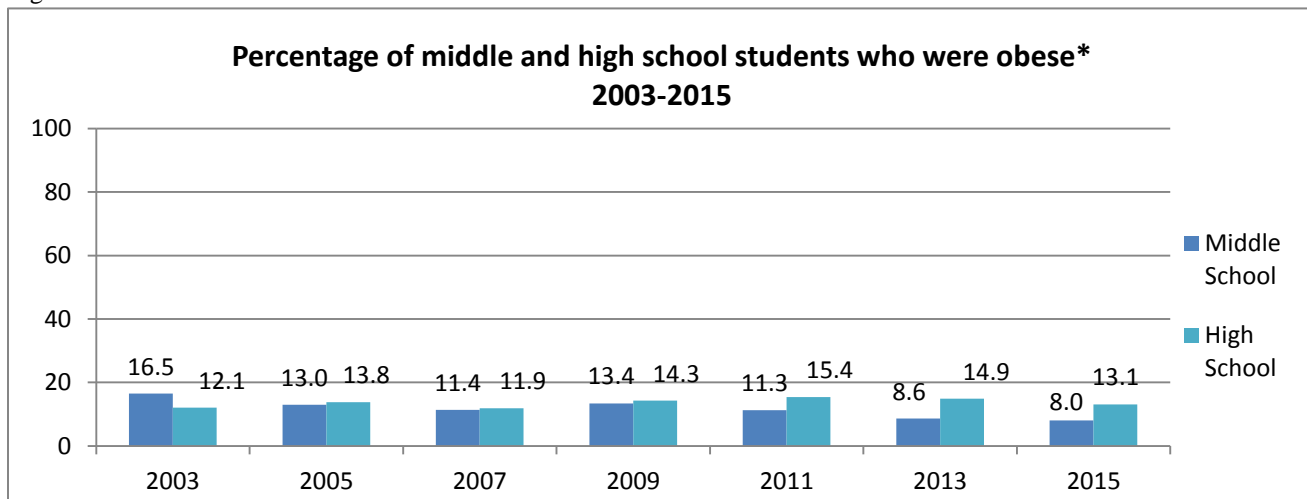


*Overweight for youth is defined as having a BMI between the 85th and 95th percentile on the CDC Growth Chart. BMI is calculated from self-reported height and weight.

Obesity

The percentage of middle school students who were obese declined significantly from 16.5 percent in 2003 to 8.0 percent in 2015 (Figure 9).

Figure 9



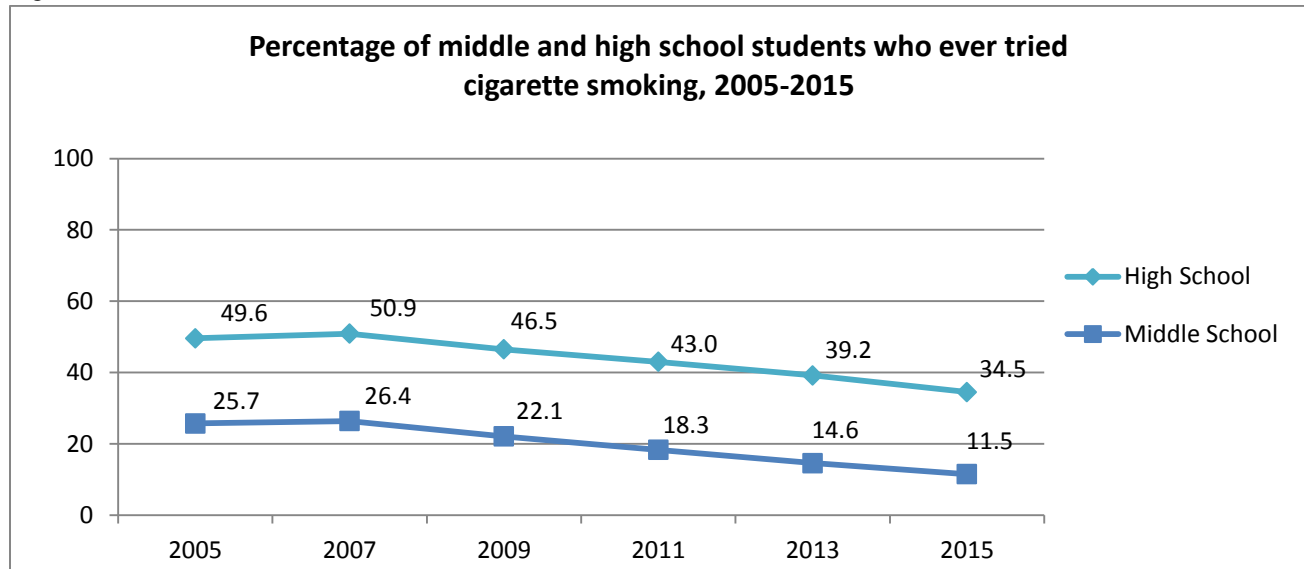
*Obese for youth is defined as having a BMI at or above the 95th percentile on the CDC Growth Chart

Cigarette Smoking

Ever tried cigarette smoking

The percentage of middle and high school students who ever tried smoking cigarettes declined significantly from 2005 to 2015 (Figure 10).

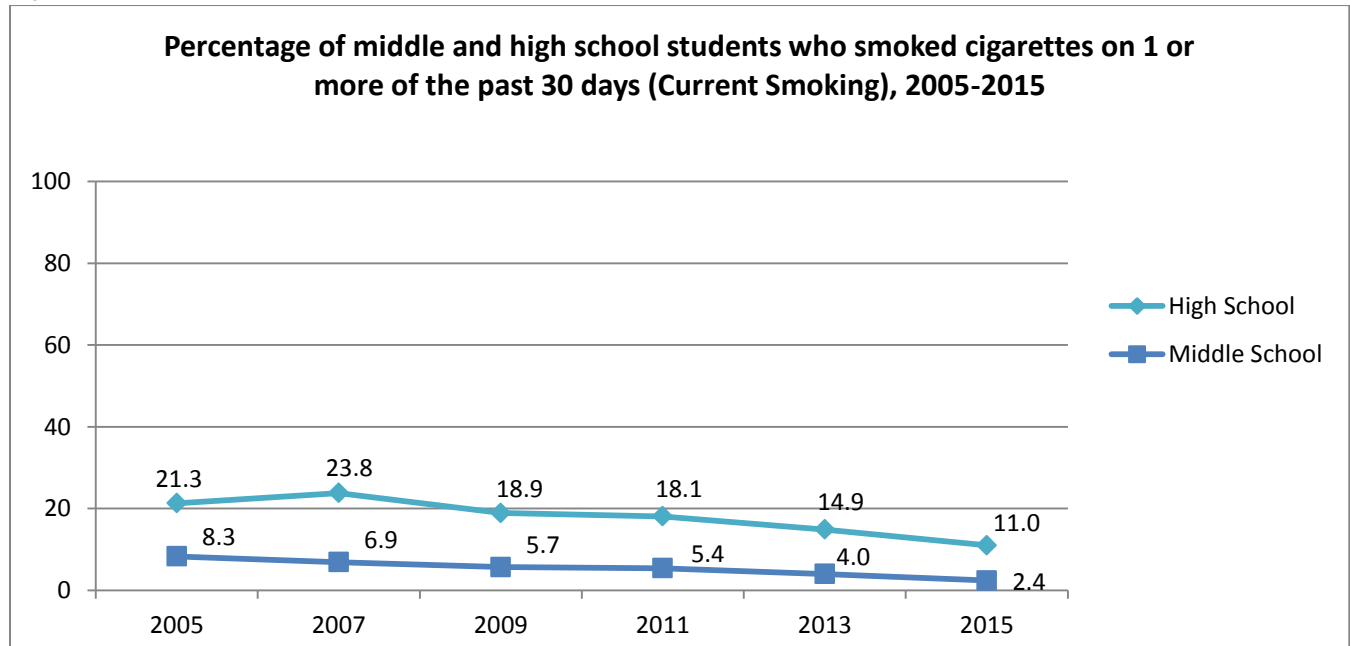
Figure 10



Current cigarette smoking

The percentage of middle and high school students who smoked cigarettes on one or more of the past 30 days declined significantly from 2005 to 2015 (Figure 11).

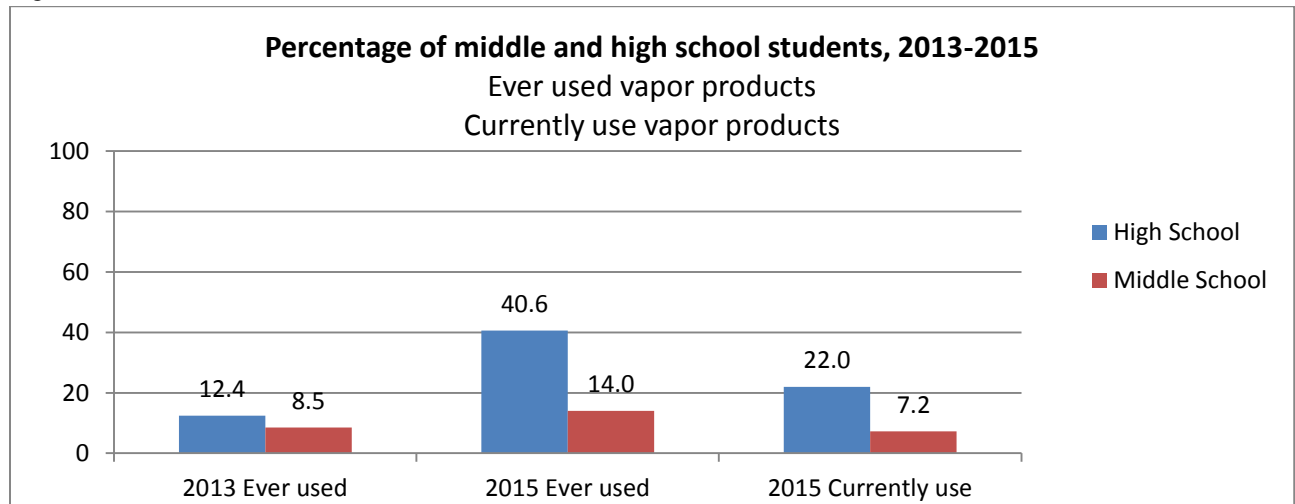
Figure 11



Electronic Vapor Products

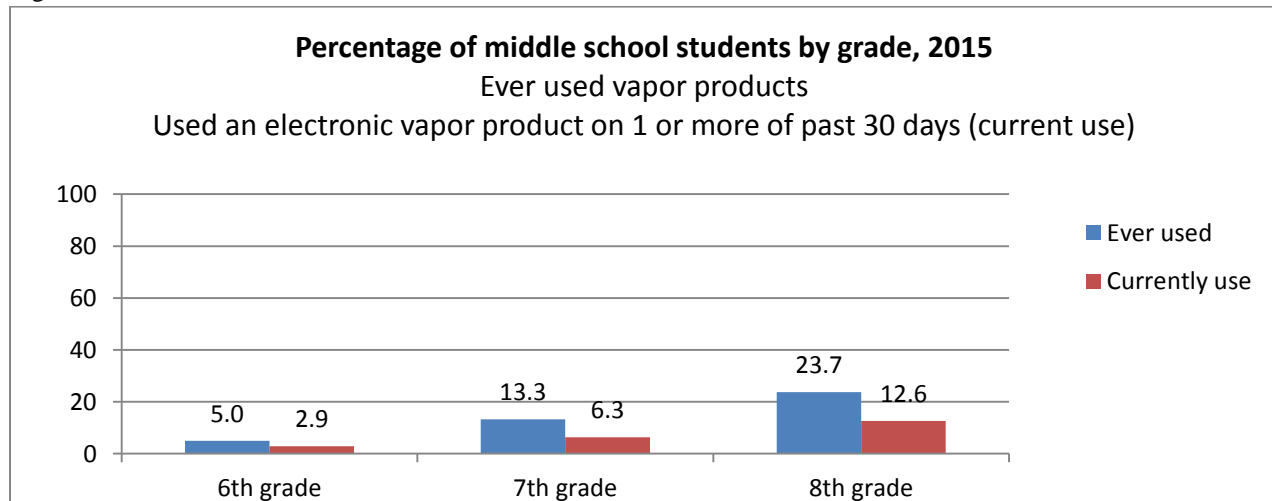
In 2013, 12.4 percent of high school students and 8.5 percent of middle school students had ever tried using an electronic cigarette, or e-cigarette. In 2015, 40.6 percent of high school students and 14.0 percent of middle school students had ever used an electronic vapor product, such as e-cigarettes, e-cigars, e-pipes, vape pipes, vape pens, e-hookahs, and hookah pens such as blu, NJOY or Starbuzz (Figure 12). Twenty-two (22.0) percent of high school students and 7.2 percent of middle school students had used vapor products on 1 or more of the past 30 days (current use).

Figure 12



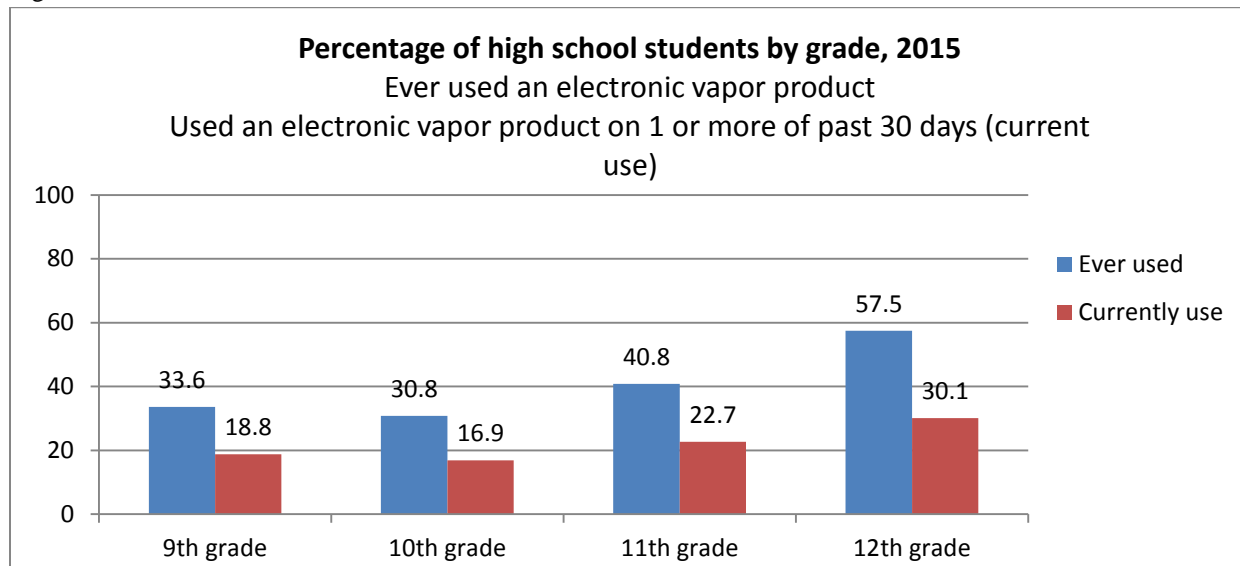
Almost one-quarter of 8th grade students had ever used a vapor product and 12.6 percent currently used the products (Figure 13).

Figure 13



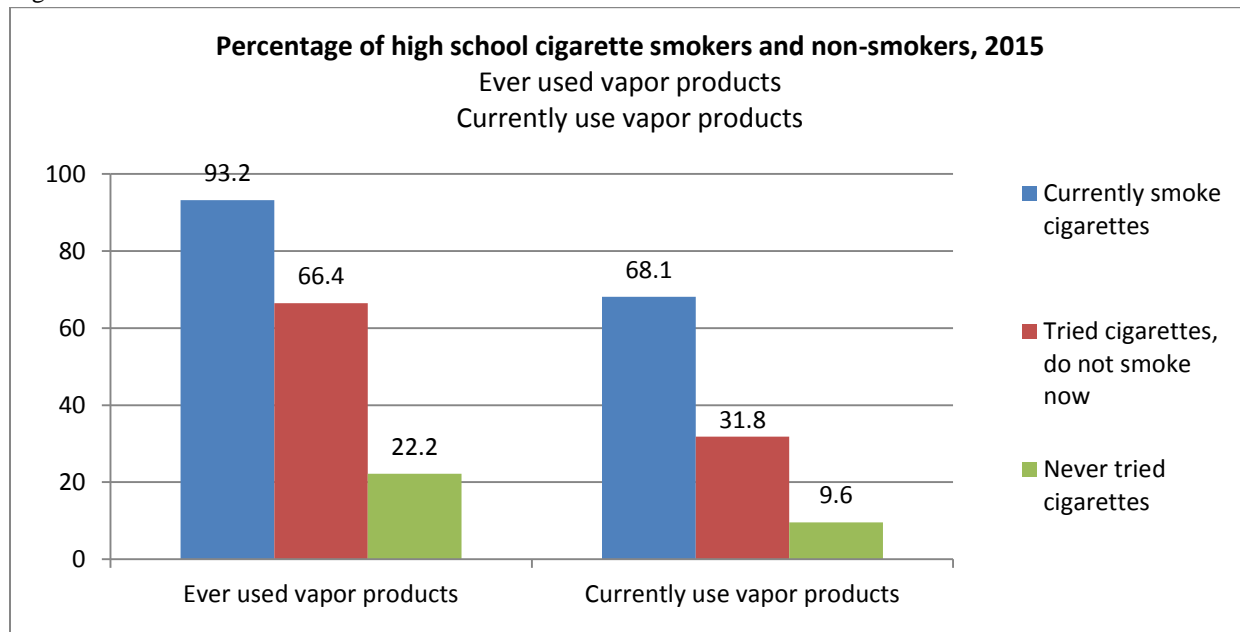
Over half of 12th grade students had ever used an electronic vapor product in 2015 and 30.1 percent currently used the products (Figure 14).

Figure 14



Among high school current cigarette smokers in 2015, 93.2 percent had ever used a vapor product and 68.1 percent currently used vapor products (Figure 15). Among students who had tried cigarettes but do not smoke now, 66.4 percent had ever used a vapor product and 31.8 percent were current vapor users. Among students who had never tried smoking cigarettes, 22.2 percent had tried vapor products and 9.6 percent currently used the products.

Figure 15

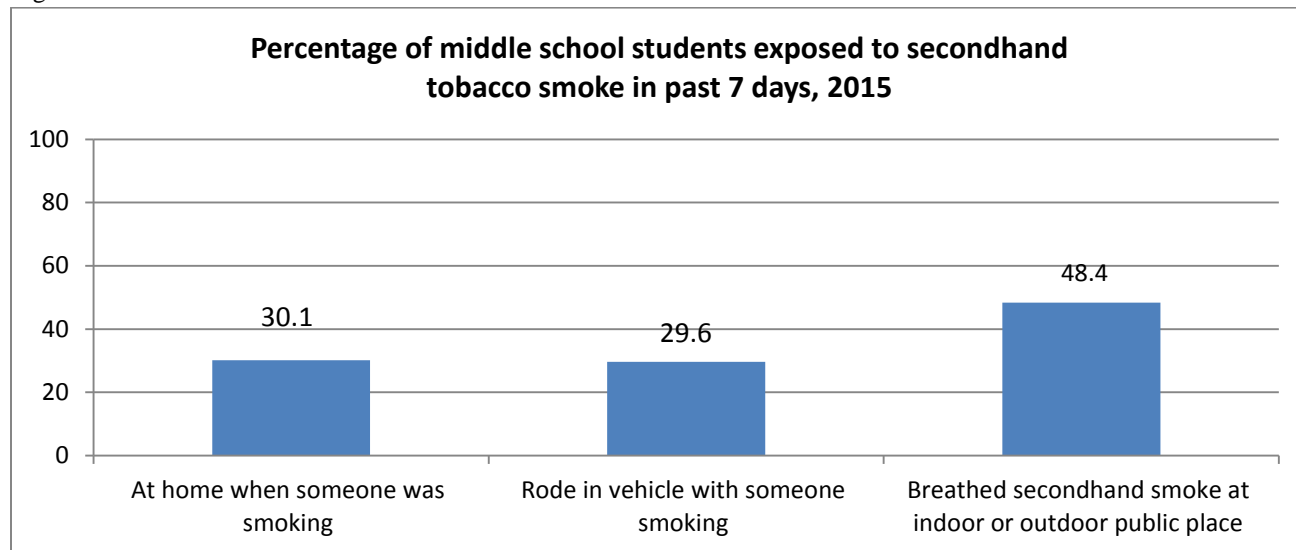


Exposure to Secondhand Tobacco Smoke

Middle School Students' Exposure

In 2015, almost one-half of middle school students were exposed to secondhand tobacco smoke while at an indoor or outdoor public place (such as school buildings, stores, restaurants, stadiums, school grounds, parking lots, stadiums and parks) during the past seven days (Figure 14).

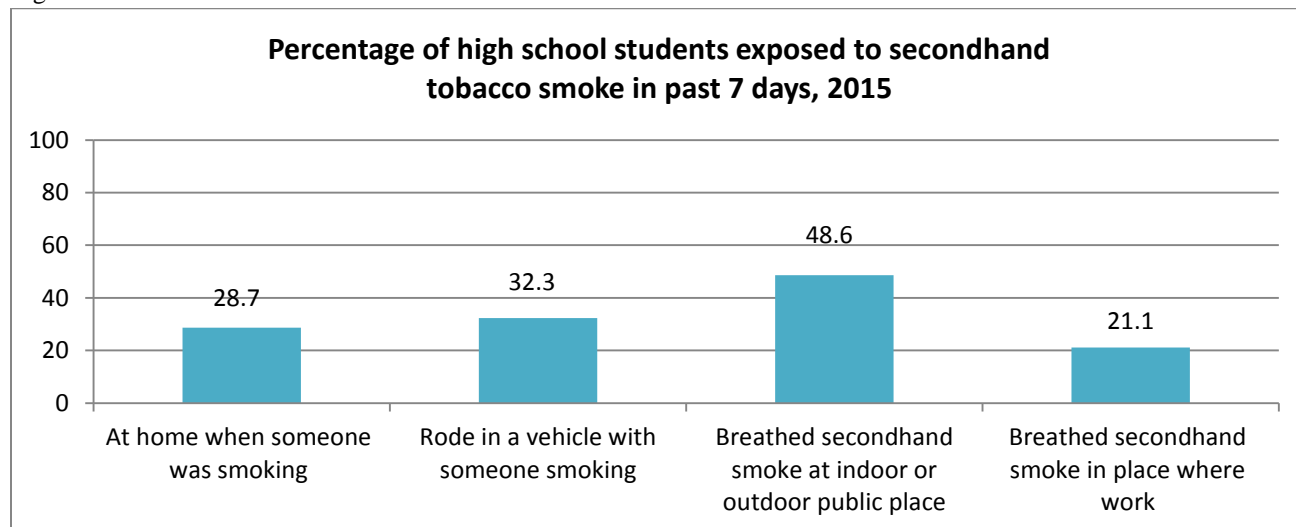
Figure 14



High School Students' Exposure

In 2015, almost one-half of high school students were exposed to secondhand tobacco smoke while at an indoor or outdoor public place during the past seven days (Figure 15). Twenty-one percent of students that work breathed secondhand smoke at work on at least one of the past seven days.

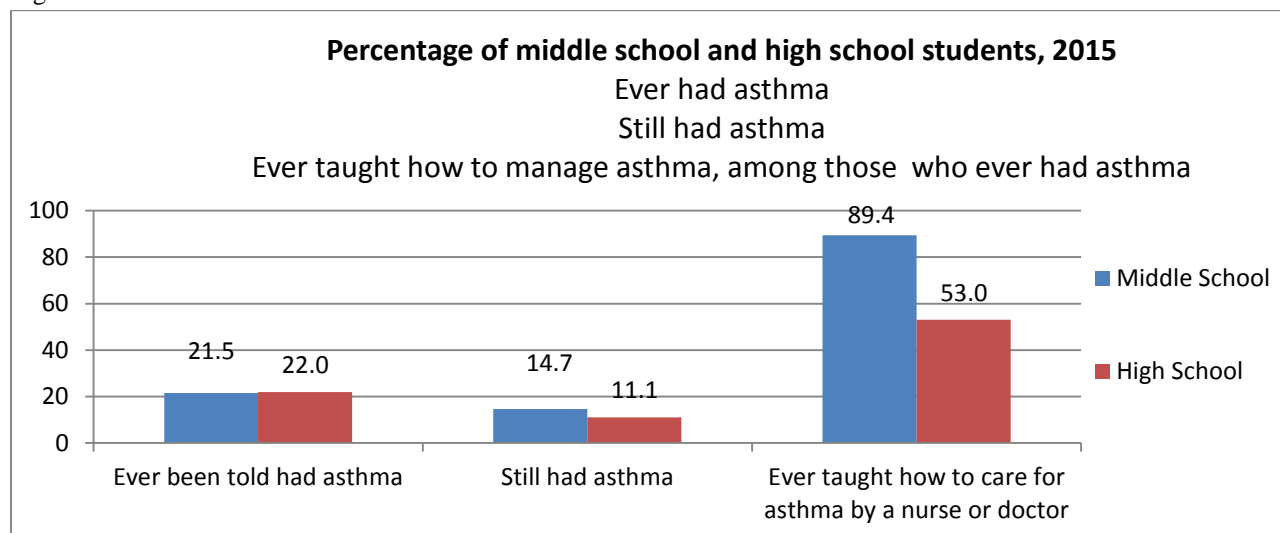
Figure 15



Asthma

In 2015, 14.7 percent of middle school students and 11.1 percent of high school student had ever been told by a doctor or nurse that they had asthma and still had the condition (Figure 16). Eighty-nine (89.4) percent of middle school students and 53.0 percent of high students who ever had asthma had been taught how care for the condition by a doctor or nurse.

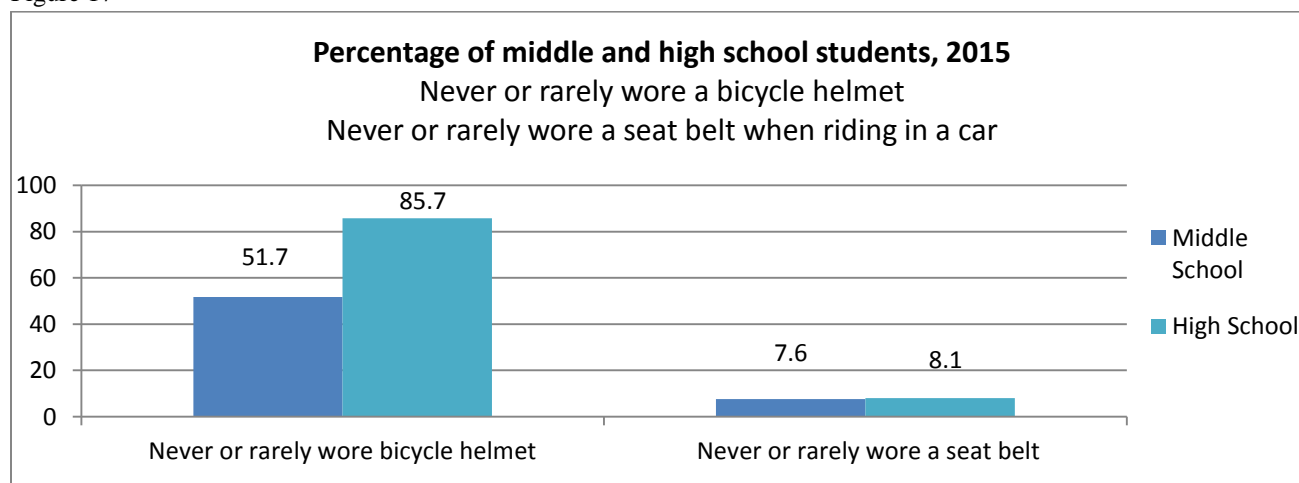
Figure 16



Bicycle Helmet and Seat Belt Use

In 2015, among students that rode a bicycle in the past 12 months, 51.7 percent of middle school students and 85.7 percent of high school students never or rarely wore a bicycle helmet (Figure 17). Eight (7.6) percent of middle school students and 8.1 percent of high school students never or rarely wore a seat belt when riding in a car driven by someone else (Figure 17). Also, among high school students that drove a car in 2015, 7.0 percent never or rarely wore a seat belt.

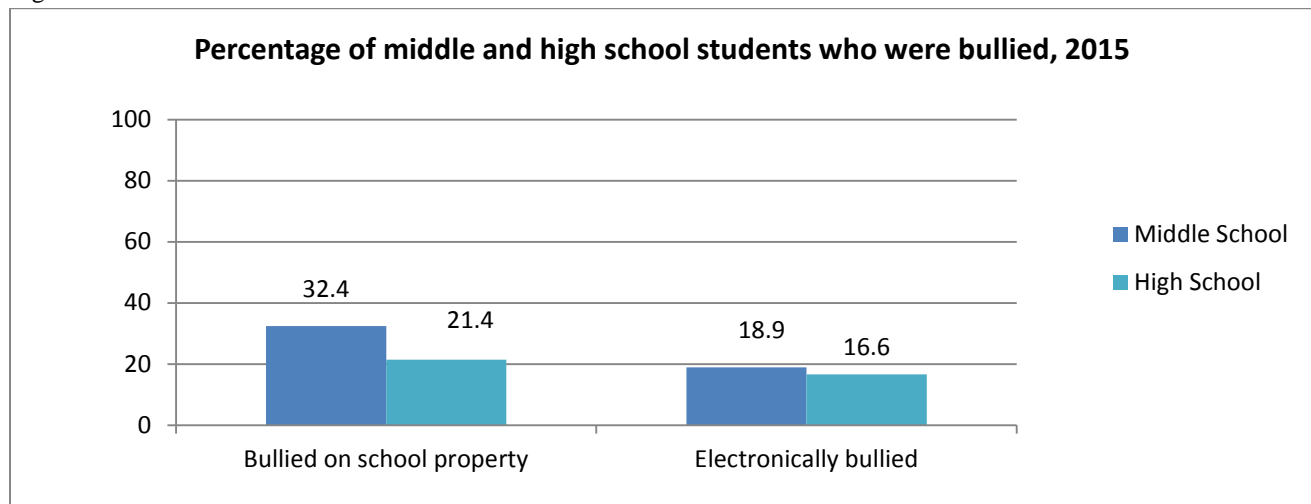
Figure 17



Bullying

In 2015, one-third of middle school students and 21.4 percent of high school students were bullied on school property during the past 12 months (Figure 18). Nineteen (18.9) percent of middle school students and 16.6 percent of high school students were electronically bullied, including through e-mail, chat rooms, instant messaging, websites or texting.

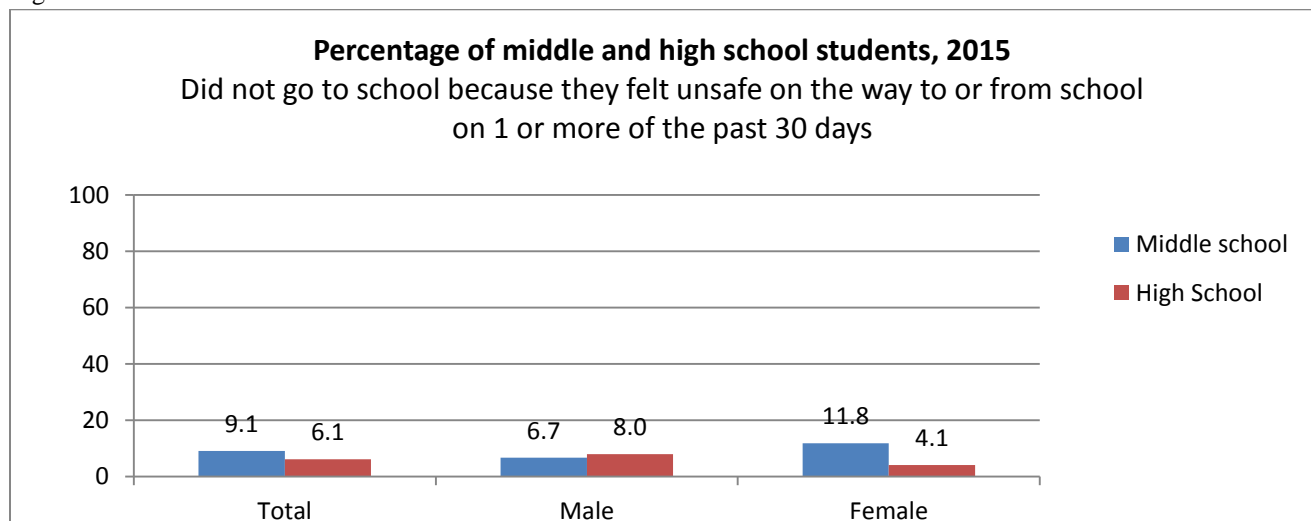
Figure 18



Felt Unsafe Going to School

In 2015, six percent of high school students and nine percent of middle school students did not go to school on one or more of the past 30 days because they felt unsafe on the way to or from school (Figure 19).

Figure 19

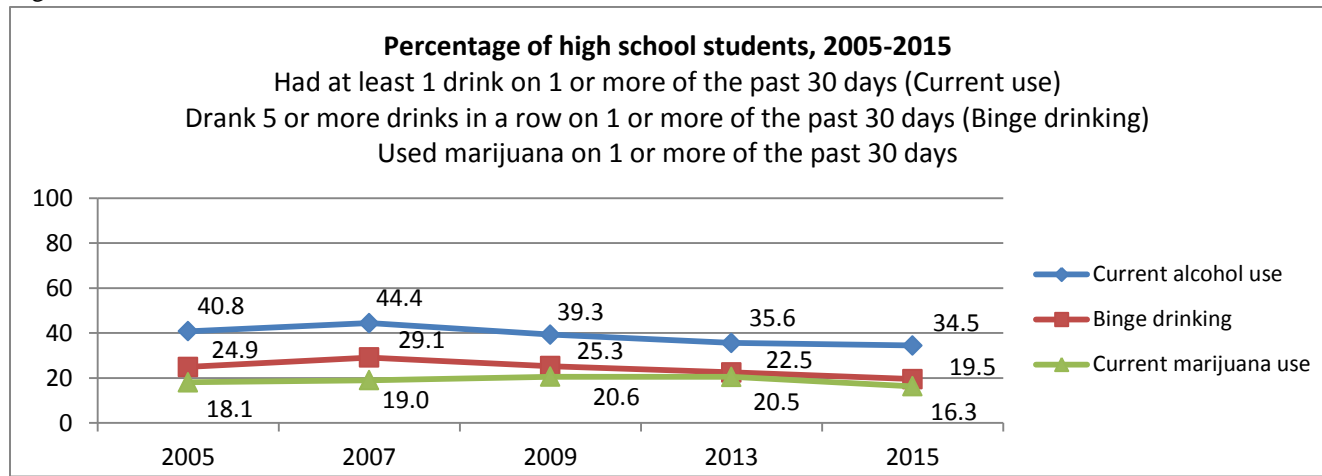


Health Risk Behaviors among Missouri High School Students

Alcohol and Marijuana Use

The percentage of high school students who had at least one drink of alcohol on one or more of the past 30 days declined significantly from 40.8 percent in 2005 to 34.5 percent in 2015 (Figure 20). Binge drinking also declined significantly from 24.9 percent in 2005 to 19.5 percent in 2015. There was no significant change in marijuana use over the decade. No data are available for 2011.

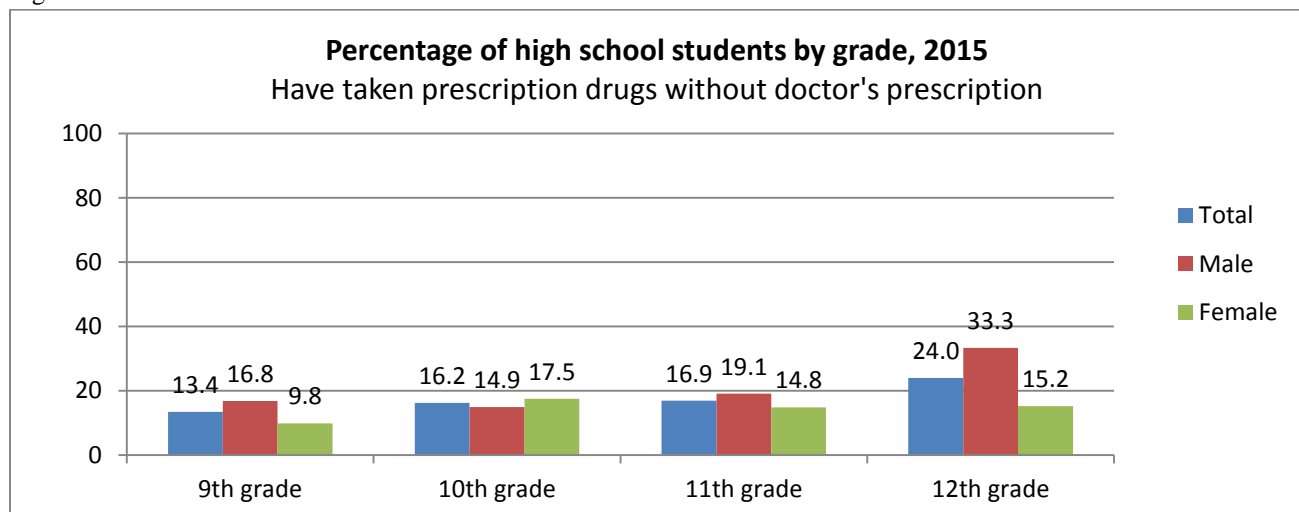
Figure 20



Prescription Drug Use

In 2015, high school students were asked for the first time about use of prescription drugs. Overall, 17.5 percent of students had ever taken prescription drugs without a doctor's prescription. One-third of 12th grade males had ever taken a prescription drug without a doctor's prescription (Figure 21).

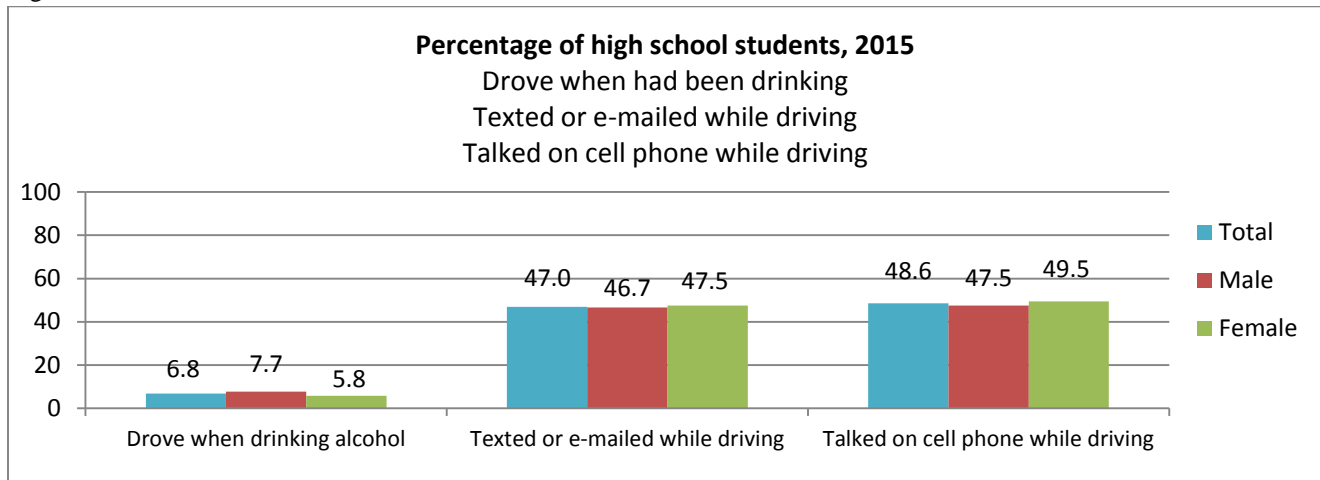
Figure 21



Driving while Drinking, Texting or E-mailing, and Talking on Cell Phone

In 2015, among students who drove a car or other vehicle during the past 30 days, 6.8 percent drove when drinking alcohol, 47.0 percent texted or e-mailed, and 48.6 percent talked on a cell phone one or more times during the past 30 days (Figure 22).

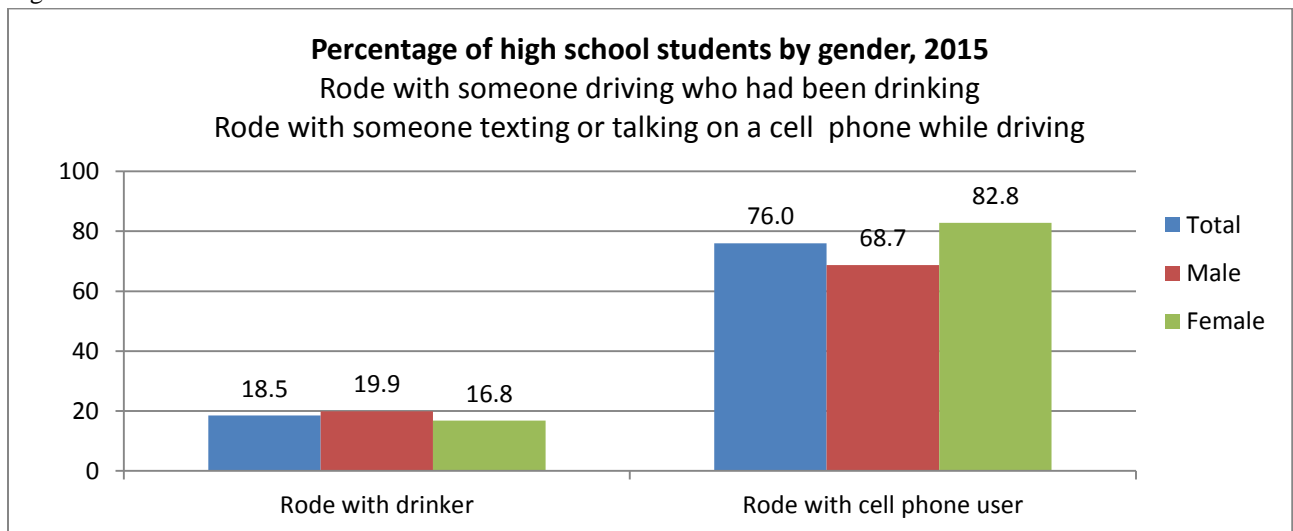
Figure 22



Riding with someone who was Drinking or Using a Cell Phone while Driving

In 2015, 18.5 percent of high school students rode with someone driving when they had been drinking alcohol on one or more days of the past 30 days (Figure 23). Over 80 percent of females rode with someone who was using a cell phone while driving on one or more of the past 30 days.

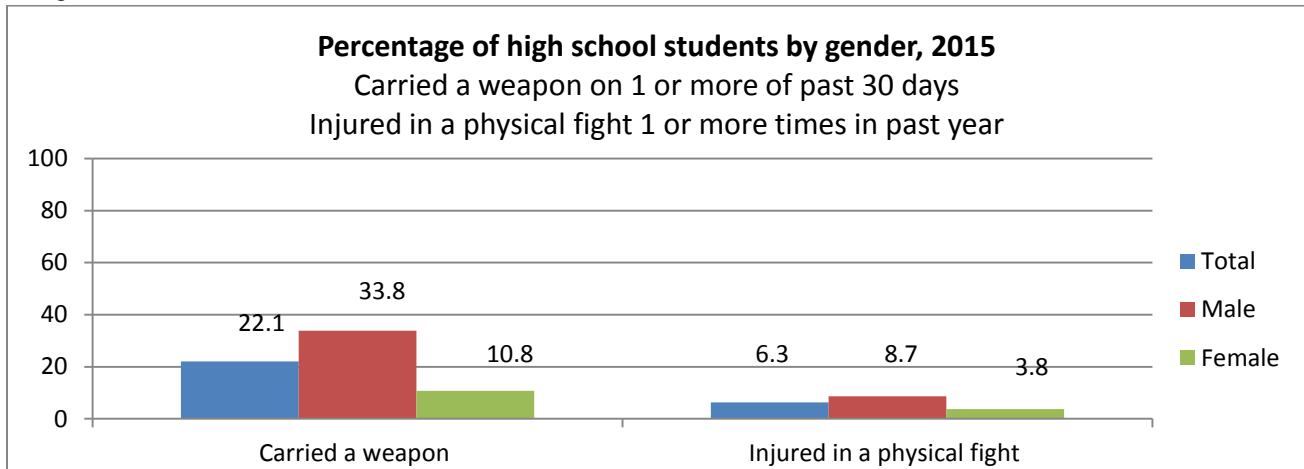
Figure 23



Weapon Carrying and Physical Fighting

In 2015, one-third of high school males carried a weapon on one or more of the past 30 days (Figure 24). Nine (8.7) percent of high school males were injured in a physical fight one or more times in the past 12 months and had to be treated by a doctor or a nurse (Figure 24). Also, 9.1 percent of males carried a weapon on school property on 1 or more of the past 30 days.

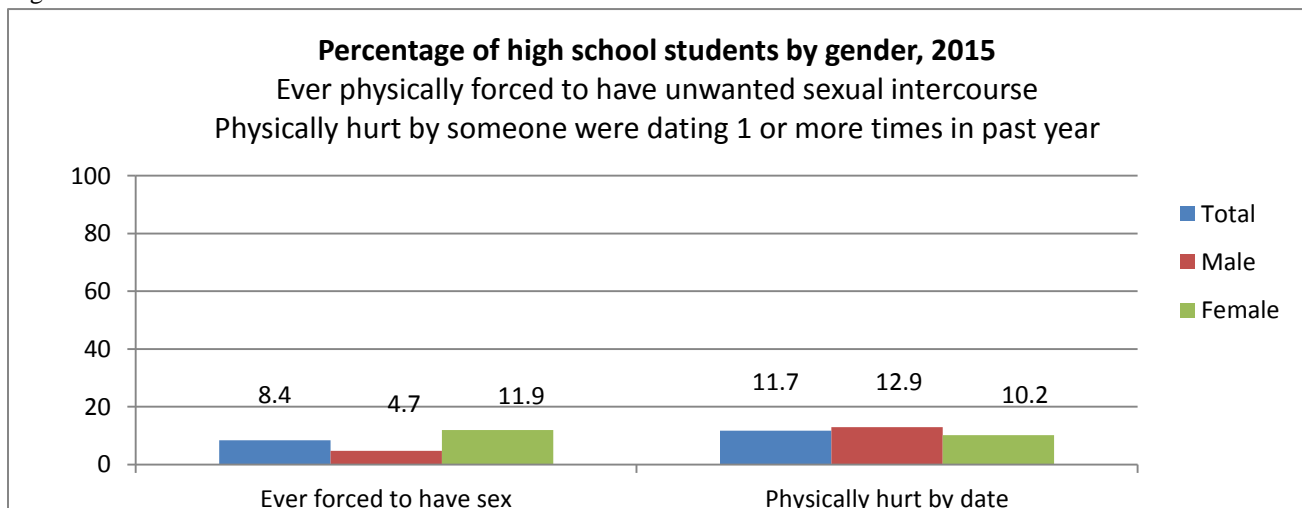
Figure 24



Forced Sexual Intercourse and Dating Violence

In 2015, 11.9 percent of high school females had ever been physically forced to have sexual intercourse that they did not want (Figure 25). Among students that dated or went out with someone in the past 12 months, 12.9 percent of males and 10.2 percent of females had been physically hurt by someone they were dating.

Figure 25

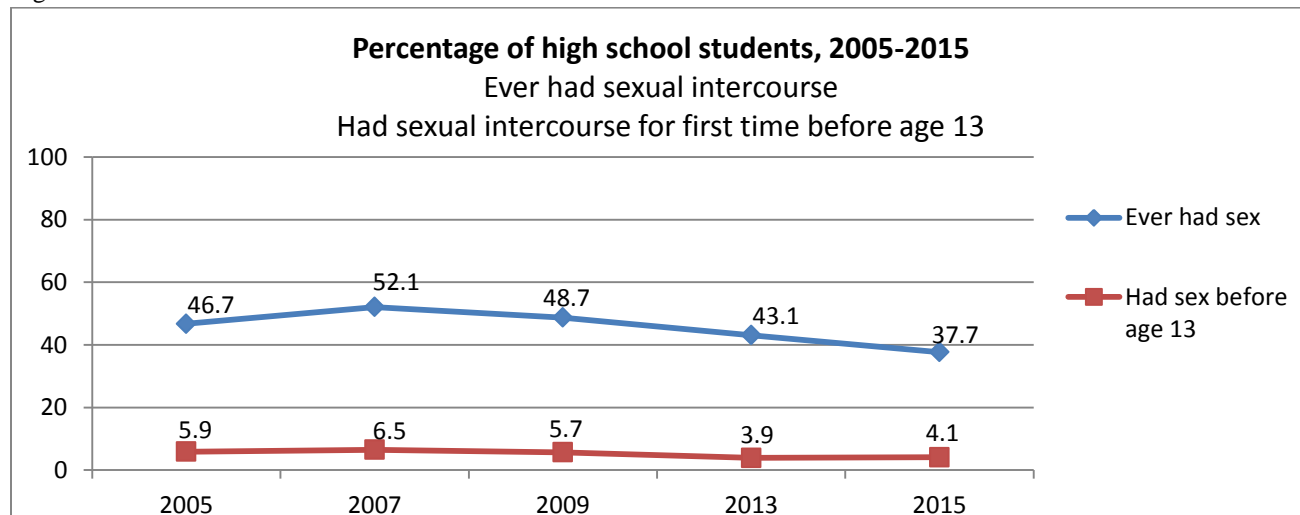


Sexual Intercourse

Ever had sexual intercourse and intercourse before age 13

The percentage of high school students who had ever had sexual intercourse declined significantly from 46.7 percent in 2005 to 37.7 percent in 2015 (Figure 26). The percentage of students who had sexual intercourse before age 13 also declined significantly during the decade.

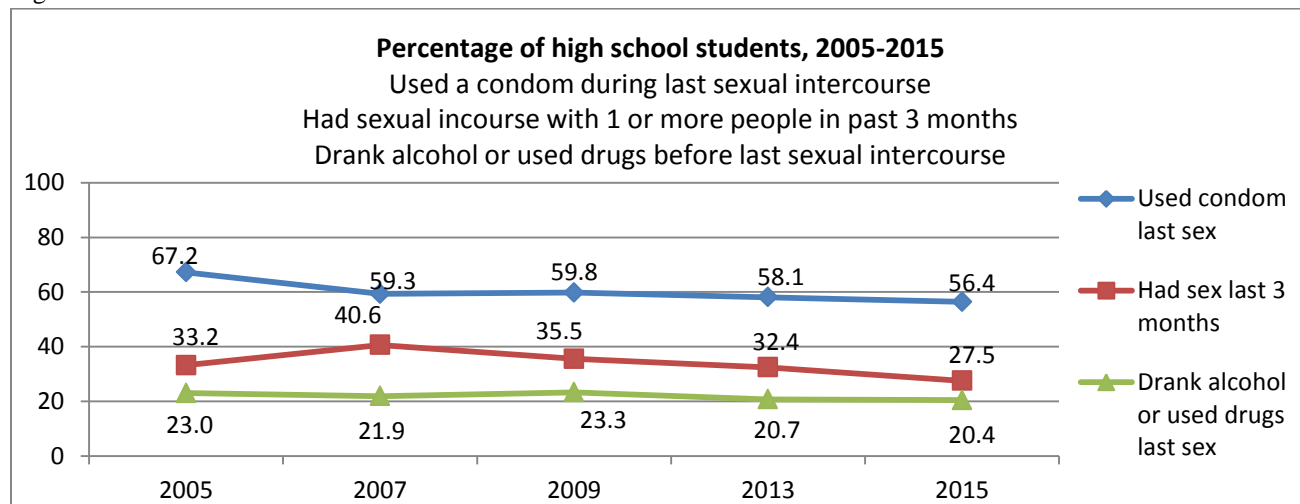
Figure 26



Current sexual intercourse, condom and alcohol use

The percentage of high school students who had sexual intercourse with one or more people during the past three months (current intercourse) declined significantly from 2005 to 2015 (Figure 27). Among those that had intercourse in the past three months, the percentage of students in which a condom was used during their last intercourse also declined significantly during the decade.

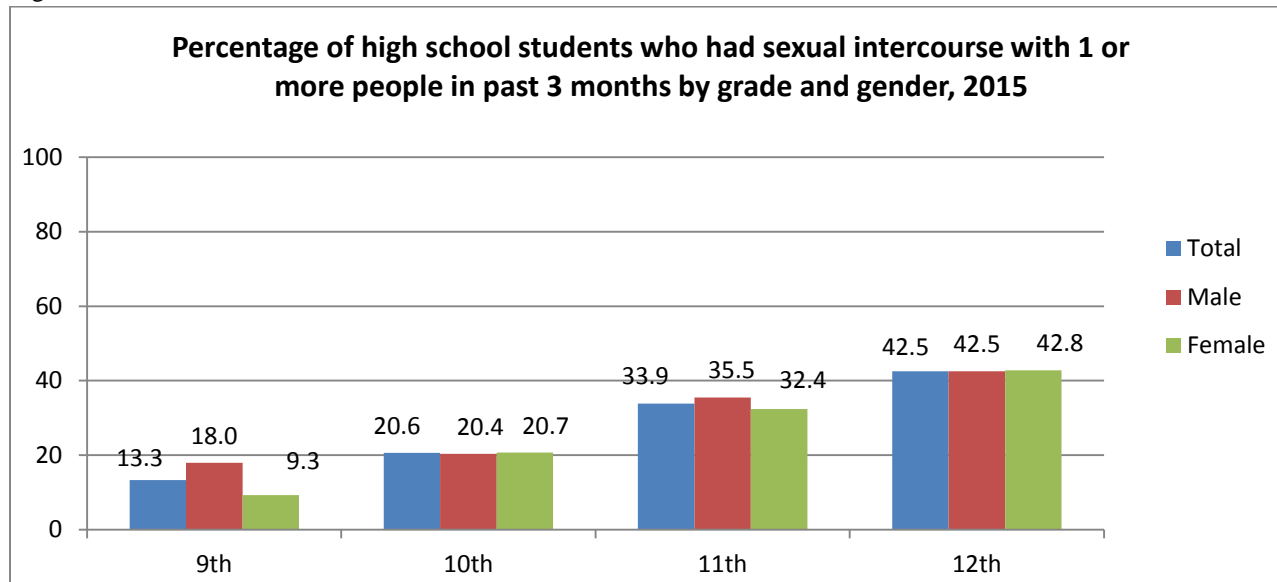
Figure 27



Current sexual intercourse

The percentage of high school students who had sexual intercourse during the past three months increased significantly from the 9th and 10th grades to the 11th and 12th grades (Figure 28).

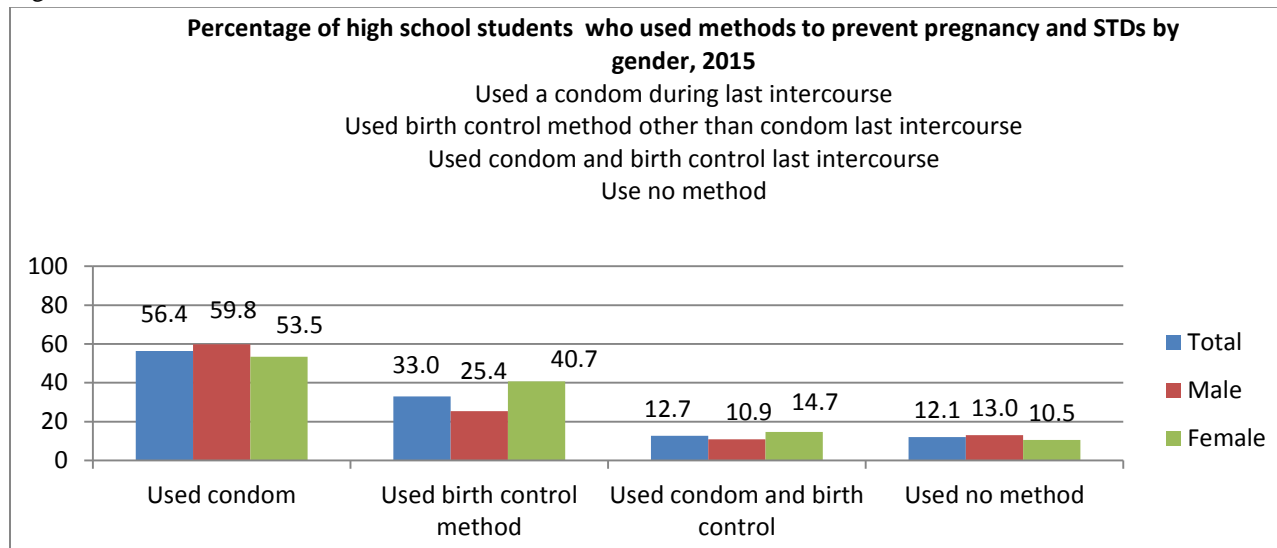
Figure 28



Condom and birth control use by students or their partner

Among high school students who had sexual intercourse in the past three months, 56.4 percent used a condom during last sexual intercourse to prevent pregnancy and STDs, 33.0 percent use birth control pills, IUD or implant, shot, patch or ring to prevent pregnancy, and 12.7 percent use both a condom and a birth control method to prevent STDs and pregnancy (Figure 29). Twelve (12.1) percent did not use any method to prevent pregnancy or STDs during last intercourse.

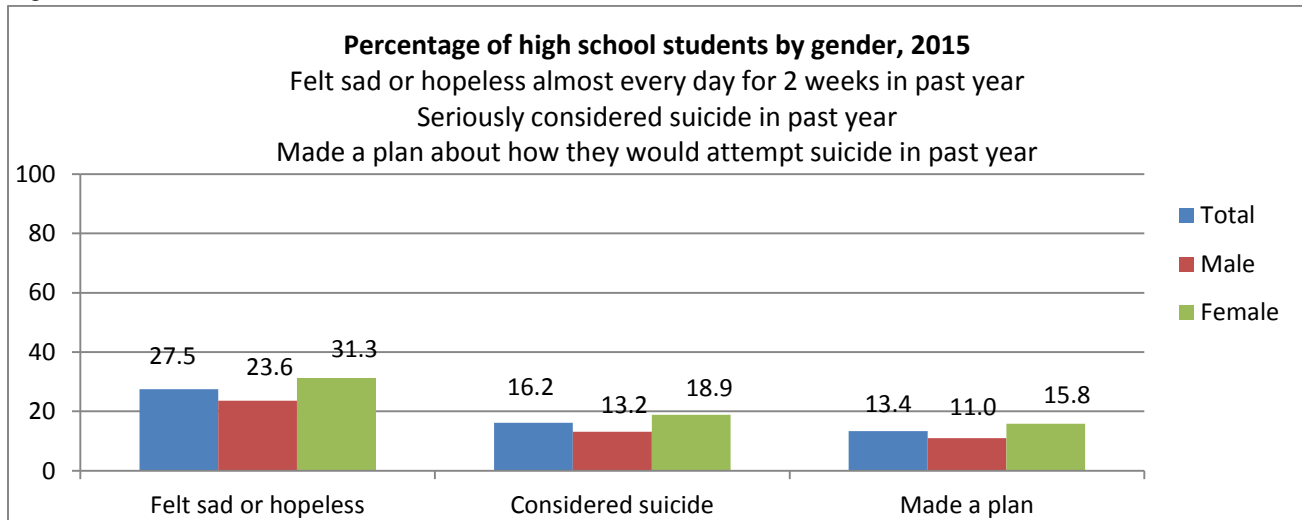
Figure 29



Depression and Suicide

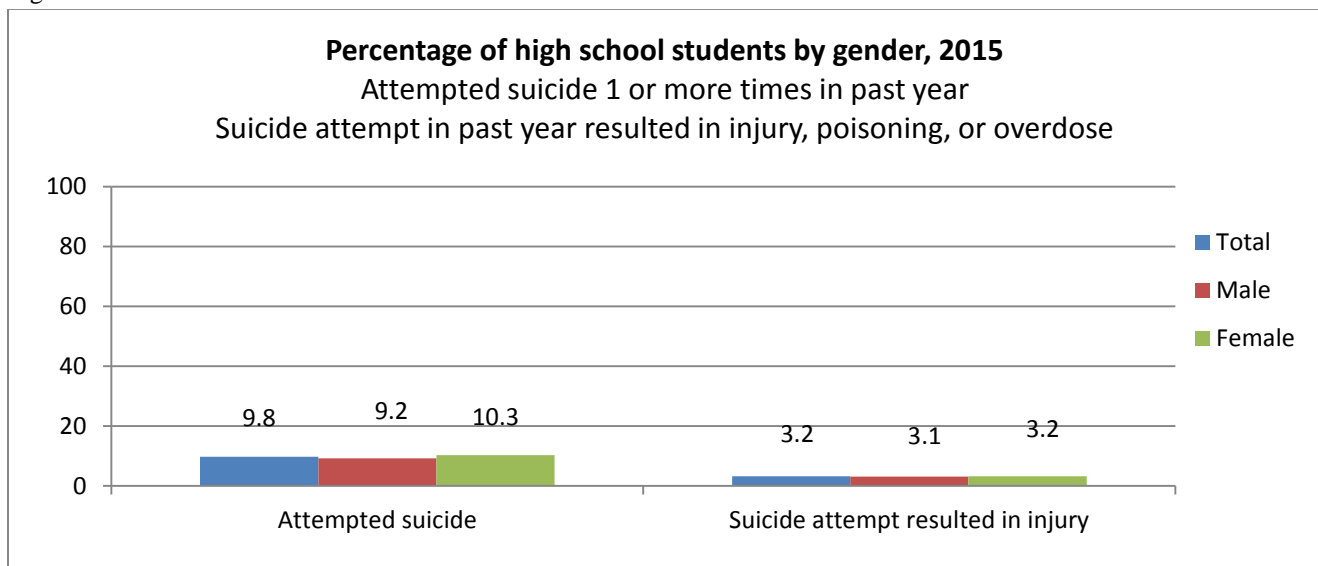
During the decade 2005-2015, there were no significant changes in the percentage of high school students who experienced depression or planned or attempted suicide. In 2015, almost one-third (31.3 percent) of females felt so sad or hopeless almost every day for two weeks or more in a row during the past 12 months that they stopped doing some usual activities (Figure 30). Nineteen (18.9) percent of females seriously considered suicide and 15.8 percent made a plan.

Figure 30



In 2015, 9.8 percent of high school students attempted suicide (Figure 31). Three percent of students who attempted suicide had to be treated by a doctor for an injury, poisoning or an overdose.

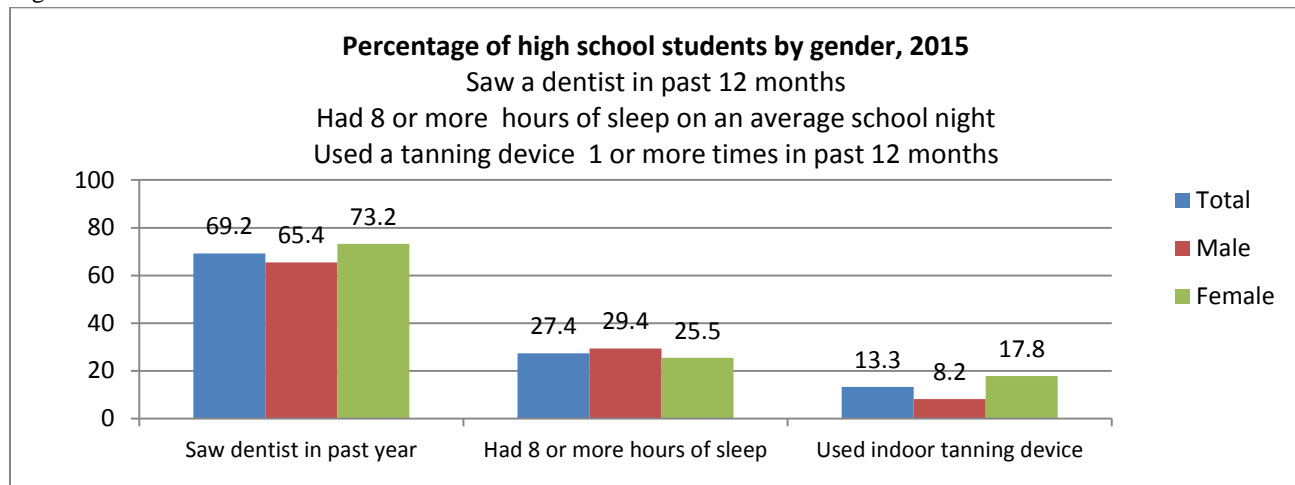
Figure 31



General Health Issues

In 2015, 69.2 percent of high school students had visited a dentist in the past 12 month, 27.4 percent had 8 or more hours of sleep on an average school night, and 13.3 percent had used an indoor tanning device one or more times in the past 12 months (Figure 32).

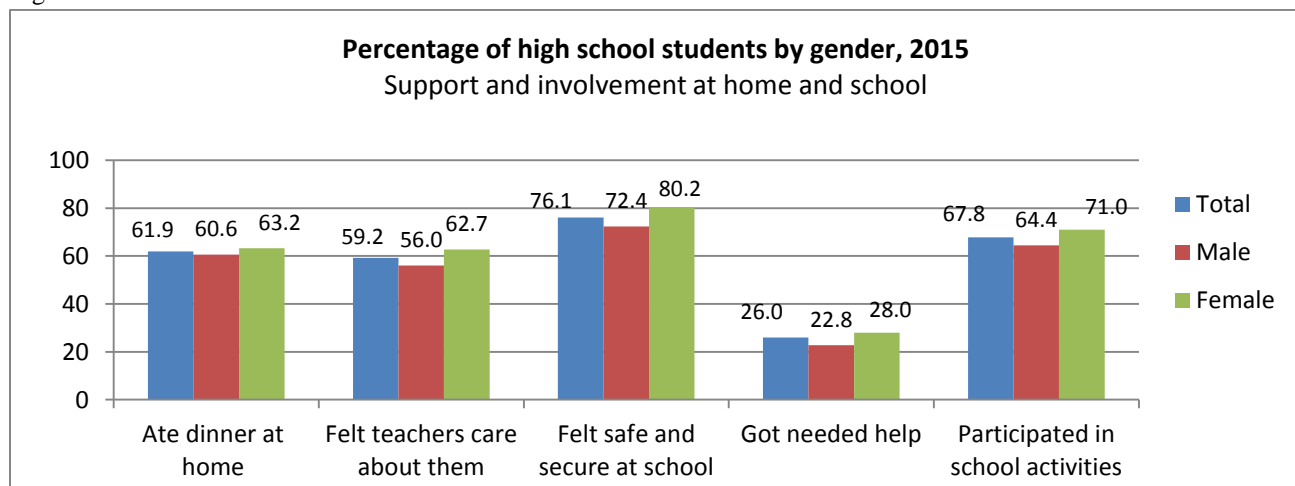
Figure 32



Support and Involvement at Home and School

In 2015, the majority of high school students ate dinner at home with at least one parent on four or more of the past seven days, agreed or strongly agreed that teachers really cared about them, felt safe at school always or most of the time and participated in school activities one or more hours per week in an average school week (Figure 33). However, among students who felt sad, empty, hopeless, angry or anxious, only 26.0 percent got help when needed always or most of the time.

Figure 33



Survey methodology

The Missouri Youth Tobacco Survey (YTS) was conducted by the Missouri Department of Health and Senior Services (DHSS) with middle and high school students every odd-numbered spring from 2003 through 2011 and with middle school students only in 2013 and 2015. The Missouri Youth Risk Behavior Survey (YRBS) was administered by the Missouri Department of Elementary and Secondary Education (DESE) with high school students in odd-numbered springs from 1995 through 2011, and then by DHSS in 2013 and 2015.

Both paper and pencil surveys were supported by the U.S. Centers for Disease Control and Prevention (CDC), which provided funding for survey administration, and performed school sampling, data tabulation, weighting and primary analysis. DHSS staff administered the surveys by obtaining participation of randomly selected schools, securing class schedules and randomly selecting classes for participation, providing survey materials to participating schools, and collecting and processing completed surveys for shipping to the CDC.

Sampling design

All regular and charter public schools in Missouri containing grades 6-8 in which 6th grade was not the highest grade in the building were included in the sampling frame for middle schools. Buildings containing grades 9-12 were included in the sampling frame for high schools. A two-stage cluster sample design was used to produce a separate representative sample of students for middle school and high school.

In the first-stage sampling, schools were randomly selected with probability proportional to the school enrollment size. In the second stage, systematic equal probability sampling with a random start was used to select classes from each school that participated in the survey. All classes in the selected schools were included in the second-stage sampling frame. All students in the selected classes were eligible to participate in the survey. School and student participation were anonymous and confidential. Passive parental permission was utilized unless the school district required active permission.

Response rates

Response rates were calculated by multiplying the school participation rate by the student participation rate for middle schools and high schools. The response rate must be equal to or greater than 60 percent for data to be weighted to adjust for unequal probability selection of each student and to reduce bias by compensating for differing patterns of non-response.

Sufficient responses for weighting the data have been obtained each year the YTS was conducted in Missouri. In 2015, 30 of 42 (71.4 percent) sampled middle schools participated with 1,708 of 1,920 (89.0 percent) sampled middle school students completing usable questionnaires. The overall response rate was 63.5 percent.

Sufficient responses for weighting the data have been obtained each year the YRBS was conducted in Missouri, except in 2011. In 2015, 29 of 40 (72.5 percent) sampled high schools and 1,502 of 1,722 (87.2 percent) sampled high school students completed usable questionnaires. The overall response rate was 63.2 percent.